LISTING OF DISCLOSURE AMENDMENTS

Please amend paragraphs [0015], [0016], [0019], [0022], [0026] and [0028] of the specification as follows:

[0015] Before describing the present invention, a brief description of the prior art, with reference to ~~Fig. 1~~ Fig. 2 is now given. In ~~Fig. 1,~~Fig. 2, liquid oil in an oil supply source 100 such as an oil reservoir, is conventionally directed under pressure into main bearing cavities 102 of the main shaft of the aircraft engine and an accessory gear box (AGB) 104, respectively. During the lubrication in the main bearing cavities 102, the liquid oil is mixed with the relatively hot compressed air streams used to pressure labyrinth seals of the main bearing cavities, resulting in a hot air/oil mixture because the liquid oil absorbs heat energy produced in the main bearing cavities as a result of the very high speed rotation of the main shaft of the aircraft engine, and further mixes with the relatively hot compressed air streams. In order to separate the liquid oil from air contained in the hot air/oil mixture using a centrifugal separator 106 mounted within for example, ~~an accessories gearbox (AGB)~~ the AGB 104 (which is driven by the main shaft of the aircraft engine), the hot air/oil mixture is collected from the main bearing cavities 102 of the engine into the AGB 104 in which the hot air/oil mixture reaches the inlet of the centrifugal separator 106. Liquid oil contained in the air/oil mixture in the centrifugal separator 106, is under centrifugal forces and is discharged to the inside of the AGB 104, after which it accumulates at a lower portion of the AGB 104, and is then delivered to a scavenging system 108. Air contained in the air/oil mixture in the centrifugal separator 106 under the pressure differential is discharged through a passage (as indicated by the broken line arrow 110), which is isolated from the inside of the AGB 104, to outside of the engine. The recovered liquid oil after the scavenging

process, is returned to the oil supply source 100. The liquid oil immediately after separation from the hot air/oil mixture, is still relatively hot, and then becomes much cooler after the scavenging process and by being mixed with the liquid oil stored in the oil supply source 100. This cooling step is indicated by block 112, which does not necessarily indicate a specific oil cooling device.

[0016] In ~~Fig. 2,~~ Fig. 3, a diagram illustrates a method according to the present invention for lubricating an aircraft engine. Relatively cool liquid oil is contained in an oil supply source 200, for example, an oil reservoir. A first amount of the cool liquid oil is transferred directly to a gearbox of the aircraft engine, for example, an accessories gearbox (AGB) 204, as indicated by the arrowed line 206. The first amount of the cooled liquid oil enters the casing of the AGB 204 and lubricates the gears and other components (not shown) of the AGB 204 by any suitable means, such as splashing disk. A second amount of the cool liquid oil is transferred from the oil supply source 200 to the main bearing cavities 202 of the main shaft of the aircraft engine, for lubricating and cooling the bearings around the main shaft of the aircraft engine, as indicated by the arrowed line 210. In the main bearing cavities 202, the cool liquid oil becomes a relatively hot air/oil mixture because of heat energy produced by the high-speed rotation of the bearings and the main shaft of the aircraft engines, and because of the relatively hot compressed air streams used to pressure labyrinth seals, which enters the main bearing cavities 202, resulting in aeration of the liquid oil in the main bearing cavities 202. The relatively hot air/oil mixture is collected from the main bearing cavities 202 and delivered into a air/oil separation system 212 disposed inside the AGB 204. The air/oil separation system 212 is preferably defined within a rotatable hollow shaft of the AGB 204 in

order to create centrifugal forces for separation of the respective liquid oil and air contained in the hot air/oil mixture. The delivery of the hot air/oil mixture from the main bearing cavities 202 is conducted, as indicated by the arrowed line 214, such that the hot air/oil mixture is delivered directly into the air/oil separation system 212 and is isolated from contacting the gears and other components of the AGB 204, in order to reduce or minimize heat transfer from the hot air/oil mixture to the AGB 204. The air/oil separation system 212 is specifically configured for such an application and will be described in detail with reference to ~~Fig. 3~~ Fig. 4 hereinafter.

[0019] ~~Fig. 3~~ Fig. 4 illustrates an embodiment of the present invention which is specifically configured for use in the method of the present invention illustrated in ~~Fig. 2,~~ Fig. 3, functioning as the air/oil separation system 212 in ~~Fig. 2~~ Fig.3. The embodiment of the present invention shown in ~~Fig. 3~~ Fig. 4 generally includes a centrifugal separation system, indicated by numeral 10 which is substantially defined within a hollow shaft 12 of a gearbox, such as an accessory gearbox of an aircraft jet engine (not shown). The hollow shaft 12 is substantially horizontally disposed and rotatably supported in bearings 14 and 16, and is driven from a main shaft (not shown) of the engine by way of gear 20.

[0022] The hollow shaft 12 preferably includes a diametrically enlarged section, as illustrated in ~~Fig. 3~~ Fig. 4, for accommodation of the annular separating chamber 22. In order to provide a suitable capacity for the separating process.

[0026] A plurality of openings 50 are defined in the second radial wall 26 which is adjacent to the annular cavity 40, communicating the annular cavity 40

with the annular separating chamber 22 in order to permit the hot air/oil mixture to flow into the inside of the annular separating chamber 22. A tube 52 is connected to the annular cavity 40 and in fluid communication with the inside of the annular cavity 40, and for example, the main bearing cavities (not shown) of the aircraft engine where the hot air/oil mixture is generated. The tube 52 is connected preferably tangentially with the cylindrical wall 44 of the annular cavity 40 (but could also be in the side radial wall 42, as shown in dotted outline at 52') in a location such that the hot air/oil mixture from the bearing cavities flows in a substantially axial direction through the annular cavity 40 and then enters the openings 50 in the second radial wall 26 of the annular separating chamber 22. A liquid oil outlet (not shown, but indicated by the arrow 54) is defined in either the side wall 42 or the cylindrical exterior wall 44, but preferably in a lower location of the annular cavity 40, and is connected to an oil scavenging system (not shown) to discharge the liquid oil collected in the annular cavity 40 into the oil scavenging system for further processing.

[0028] Details of the packing 56 and other features of the annular separating chamber 22 are described in United States Patent 6,398,833, the entire specification of which is incorporated herewithin by reference. The present invention, in this aspect, involves the installation of the annular separating chamber 22 into the hollow shaft 12, the hollow shaft 12 therfore substantially incorporating the centrifugal air/oil separation system 10. As shown in ~~Fig. 3,~~ Fig. 4, the section of the hollow shaft 12 at the end wherein the annular separating chamber 22 is installed, is enlarged to a diameter relative to the remaining section of the hollow shaft 22, in order to accommodate the annular separating chamber 22 therein.

Nevertheless, the diameter of the enlarged section of the hollow shaft 12 is preferably limited to a size, if an annular separating chamber providing the required air/oil separation capacity can be accommodated therein, such that the gear 20 can be mounted to the enlarged section of the hollow shaft 12, as indicated by numeral 20a, resulting in, for example, an accessory gearbox housing shortened by a distance indicated by double arrow 58. This minimizes possible interference between accessories and other engine parts.

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AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings includes changes to Figures 2, 3, and 4. The replacement drawings and an annotated sheet showing changes follow "APPENDIX A" after page 9 of this Response.

Attachment: Replacement Sheet(s)
Annotated Sheet(s) Showing Changes.